

4.0 Environmental Consequences

This section describes the potential environmental consequences to the natural and human environment that could be affected by the Proposed Action, the Trails Closure Alternative, and the No Action Alternative. Table 3 provides a summary of the effects to resources and compares how they are affected by the Proposed Action, the Trails Closure Alternative, and the No Action Alternative.

Table 3. Comparison of Alternatives on Affected Resources

Affected Resource	Proposed Action: Trails Management Plan	Trails Closure Alternative	No Action Alternative
Socioeconomics	Would foster more balanced use of LANL trails while allowing some recreational use to continue	Would limit LANL trail use to workers at LANL and officially invited guests	LANL trails remain open without environmental, cultural, and operational protections
Ecological Resources (species, habitat, wetlands)	Certain trails would be closed at specific times to protect habitat and sensitive species. Negligible effects on some sensitive species	More trails would be closed all of the time. Negligible to slightly beneficial effects on most sensitive species	No trail closings or restrictions. Habitat degradation may slightly increase but no adverse effects to existing sensitive species
Cultural Resources	Enhanced protection of cultural resources	Enhanced protection of cultural resources	Cultural resources would continue to be damaged and destroyed
Water Quality	Negligible effect on surface water quality	Negligible effect on surface water quality	Slight adverse effects on surface water quality
Environmental Restoration	PRs would be avoided by trail rerouting or closure	PRs would be avoided by trail closure	PRs would not be avoided—users possibly exposed to low levels of contamination
Transportation and Infrastructure	Some trails remain open to public. Limited effect on transportation or infrastructure	Most trails would close. Limited effect on transportation or infrastructure	All trails would remain open. No effect on transportation or infrastructure
Health and Safety	Minimal adverse effects	Minimal adverse effects	Minimal adverse effects
Environmental Justice	Would address some Pueblo concerns related to trail use	Would address most Pueblo concerns related to trail use	Would not address Pueblo concerns
Geology and Soils	Soil impacts minimized with BMPs and restoration	Soil impacts minimized due to trail closures and restoration	Soil degradation continues without BMPs or restoration
Waste Management	Could generate up to 120 cubic yards (yd ³) per year	Less wastes over time than Proposed Action	No additional wastes generated
Air Quality	Temporary and localized effects related to construction, maintenance, or closure	Temporary and localized effects related to construction, maintenance, or closure	No changes to ambient air quality
Noise	Limited short-term increases in noise levels from trail construction, repair, or closure	Limited short-term increases in noise levels from trail repair or closure	Ambient noise levels would remain unchanged

4.1 Socioeconomics

4.1.1 Proposed Action

The proposed Trails Management Program at LANL would not have a long-term effect on socioeconomic conditions in north-central New Mexico. There could be some short-term benefits derived from trail construction, maintenance, and closure activities. LANL workers or contractors who are part of the existing regional workforce would likely accomplish these tasks. Consequently, there would be no effect on local or regional population or an increase in the demand for housing or public services in Los Alamos or the region as a result of the Proposed Action. The proposed Trails Management Program would also address the concerns about trespassing onto adjacent San Ildefonso Pueblo lands and the concerns regarding cultural properties at LANL, while providing appropriate trail access to Los Alamos residents, workers at LANL, and officially invited guests.

The proposed Trails Management Program would address certain social concerns regarding visitor and local residential use of trails at LANL. Implementing the Proposed Action could result in the systematic closure of some trails at LANL; this action could in turn affect social recreational opportunities within LANL that are currently enjoyed by visitors to the LANL area and by residents of Los Alamos County alike. Loss of trail access would reduce perceptions of quality of place and likely result in a decrease in the attractiveness of Los Alamos as a place to live to current residents. This could contribute somewhat to an already difficult task of obtaining and retaining the highest quality workforce possible. LANL workers, tourists and visitors, and local residents that hike, ride horseback, bicycle, and otherwise use LANL trails could be excluded from engaging in these recreational activities along some trails within LANL and may, in turn, choose to shift their trail use onto neighboring lands. This shift in use of trails to those within the County of Los Alamos, Santa Fe National Forest, Bandelier National Monument, and on lands managed by the Bureau of Land Management could result in a correspondingly slight increase in the stresses placed on natural and cultural resources located within those lands. With this shift in trail user locations away from LANL, there would also likely be a slight increase in the number and location of unendorsed social trails created on those properties and also an increase in the incidence of trespassing onto private and Pueblo lands where recreational trail use has not been deemed appropriate. Over time, new trails might be created within LANL and this could result in some trail-use shifts back onto LANL land. New trails would likely be short in overall distance, and their locations would be carefully chosen to avoid or minimize adverse effects to all natural and cultural resources.

4.1.2 Trails Closure Alternative

The Trails Closure Alternative would not have a long-term effect on socioeconomic conditions in north-central New Mexico. There could be some short-term benefits derived from trail maintenance or closure activities. LANL workers or contractors who are part of the existing regional workforce would likely accomplish these tasks. Consequently, there would be no effect on local or regional population or an increase in the demand for housing or public services in Los Alamos or the region.

This alternative would address certain social concerns regarding visitor and local residential use of trails at LANL. Implementing the Trail Closure Alternative would result in the systematic closure of all trails at LANL to recreational users; this action would in turn affect social

recreational opportunities within LANL that are currently enjoyed by visitors to the LANL area and by residents of Los Alamos County alike. Loss of trail access would reduce perceptions of quality of place and likely result in a decrease in the attractiveness of Los Alamos as a place to live to current residents. This could contribute somewhat to an already difficult task of obtaining and retaining the highest quality workforce possible. LANL workers, tourists and visitors, and local residents that hike, ride horseback, bicycle, and otherwise use LANL trails would be excluded from engaging in these recreational activities along all trails within LANL and would likely choose to shift their trail use onto neighboring lands. This shift in use of trails to those within the County of Los Alamos, Santa Fe National Forest, Bandelier National Monument, and on lands managed by the Bureau of Land Management could result in a corresponding increase in the stresses placed on natural and cultural resources located within those lands. With this shift in trail-user locations away from LANL, there would also likely be an increase in the number and location of unendorsed social trails created on those properties and also an increase in the incidence of trespassing onto private and Pueblo lands where recreational trail use has not been deemed appropriate. No new LANL trail construction would be initiated under this alternative.

4.1.3 No Action Alternative

There would be no change to the socioeconomic condition of northern New Mexico if the No Action Alternative were implemented. Visitors to LANL, local area residents, and LANL workers could continue to use LANL trails for recreational purposes; no shift of trail use away from LANL onto neighboring lands would likely occur. New social trails would continue to be created at LANL in an ad hoc fashion.

4.2 Ecological Resources

4.2.1 Proposed Action

No long-term or permanent changes to ecological resources would be expected from implementing the Proposed Action with regard to existing trails. Short-term, temporary effects to animals that live along trail reaches could result from trail construction, maintenance, or closure activities. Small animals, including mammals, insects, and amphibians, occupying habitat areas along trail reaches could be temporarily displaced during trail caretaking activities; however, these species would be expected to return to the area as soon as work activities ended. In areas where trails were closed under this alternative, some increase in animal diversity might occur. Vegetation removal would be expected to be limited and would not likely affect the habitat along the trail reach.

Federally-listed threatened or endangered species, or other sensitive species currently present at LANL, would not likely be adversely affected, nor would their critical habitat be adversely affected, by activities associated with implementation of the Proposed Action. Trail maintenance work or work needed to permanently close a trail would be scheduled to accommodate the needs of identified sensitive species using habitat located along certain trail reaches as identified by the Threatened and Endangered Species Habitat Management Plan. Trails slated to remain available to recreational users would be chosen based on the ability of NNSA to adequately protect any sensitive species using habitat along those trails through the implementation of periodic trail closures or based on there being no identified sensitive species present to use potential habitat located along the trail reaches. As changes are made to the list of plants and animals protected under the ESA, the use of specific trails would need to be reassessed. Some sensitive species

may slightly benefit from some trail closures or limitations of trail users (hikers only) on a temporary or permanent basis. No new trails would be constructed in locations where existing sensitive species would be adversely affected. The overall effect of implementing the Proposed Action to most existing sensitive species would be expected to be negligible.

4.2.2 Trails Closure Alternative

Few long-term or permanent changes to ecological resources would be expected from implementing the Trail Closure Alternative. Short-term, temporary effects to animals that live along trail reaches could result from trail maintenance or trail closure activities. Small animals, including mammals, insects, and amphibians, occupying habitat areas along trail reaches could be temporarily displaced during trail caretaking activities; however, these species would be expected to return to the area as soon as work activities ended. Some increase in animal diversity might occur after certain trails were closed to all recreational users or the trails were closed to all users and reclaimed. Some selected vegetation along trails remaining intact with restricted use may be removed during trail maintenance activities, such as the removal of damaged, dead, or so-called “hazard” trees. No vehicle parking accommodations would likely be constructed under this alternative, nor would any new trails be built; therefore, no vegetation removal for clearing areas would be expected. As changes are made to the list of plants and animals protected under the ESA, the use of specific trails would need to be reassessed.

Federally-listed threatened or endangered species, or other sensitive species currently present at LANL, would not likely be adversely affected, nor would their critical habitat be adversely affected by activities associated with implementation of the Trail Closure Alternative. As changes are made to the list of plants and animals protected under the ESA, the use of specific trails would need to be reassessed. Trail maintenance work or work needed to permanently close a trail would be scheduled to accommodate the needs of sensitive species that use habitat located along certain trail reaches. Some sensitive species may slightly benefit from trail closures or the limitation of trail use to non-recreational users. The overall effect of implementing the Trail Closure Alternative to most sensitive species would be expected to be negligible to slightly beneficial.

4.2.3 No Action Alternative

No changes to biota would be expected to occur through the implementation of the No Action Alternative. Some species of animals may not presently occupy areas of potentially suitable habitat along trail reaches due to the existing level of human intrusion into those locations; this status of species diversity would be expected to continue. Habitat degradation may slightly increase over time due to unchecked erosive forces and trail-user-incurred damages under the No Action Alternative. No adverse effect to sensitive species currently present at LANL or to the critical habitat for sensitive species would be expected due to the implementation of this alternative. As changes are made to the list of plants and animals protected under the ESA, the use of specific trails would need to be reassessed.

4.3 Cultural Resources

4.3.1 Proposed Action

Trail construction, maintenance, and closure activities associated with the implementation of the Proposed Action could provide some benefit to cultural resources protection. Activities would be coordinated with LANL archeologists in consultation with appropriate Native American tribes to minimize damages to any cultural resources present along trail reaches. Trails may be temporarily closed to recreational users during trail caretaking activities because of the need to flag or otherwise denote these resources to maintenance workers so that their actions can be adjusted to avoid any damages to the resources. In the event that a cultural resource is present along an existing trail such that it would be adversely affected by certain user group activities or would be unavoidably damaged by maintenance workers, the trail may be slated for permanent closure to all or certain users or it may be closed until the involved segment of trail can be rerouted around the cultural resource. Alternately, certain trail segments could be closed periodically for Native American use. If work necessary to close a trail to all user groups would result in an adverse effect to a cultural resource, a data recovery plan would be prepared and the SHPO and appropriate Native American tribes would be consulted before such work commenced. New trails would not be constructed in locations that would result in adverse effects to cultural resources either from trail users or maintenance workers.

4.3.2 Trails Closure Alternative

Implementing the Trail Closure Alternative would enhance the protection of cultural and historic resources from trail-user-incurred damages at LANL since all trails would be closed to recreational users and some trails would be closed to all user groups. If work necessary to close a trail to all user groups would result in an adverse effect to a cultural resource, a data recovery plan would be prepared and the SHPO and appropriate Native American tribes would be consulted before such work commenced.

4.3.3 No Action Alternative

Implementing the No Action Alternative would result in the likely continuation of insidious trail-user-incurred damages to cultural resources along the various LANL trails and within nearby areas. The risk that there would be violations by trail users of various Federal and State laws and regulations protecting archeological resources would likely increase over time as the location of the trails at LANL become known to a wider audience of people due to their advertisement on the World Wide Web and in trail guide books and various publications targeting tourists and area guests.

4.4 Water Quality

4.4.1 Proposed Action

The proposed Trail Management Program would have a negligible effect on surface water quality. Existing erosion problems along trails would be corrected through trails maintenance activities and the use of BMPs during maintenance and construction. Some minimal silting could occur as a consequence of the same activities. There would be no effects on groundwater quality.

4.4.2 Trails Closure Alternative

The Trails Closure Alternative would have a negligible effect on surface water quality. Existing erosion problems would be corrected through trails maintenance activities on selected trails that remain available for use by workers at LANL and officially invited guests. BMPs to prevent further erosion would be used on trails being closed. Some minimal silting could occur as a consequence of the same activities. There would be no effects on groundwater quality.

4.4.3 No Action Alternative

The No Action Alternative would have a slight adverse effect to surface water quality because erosion along trails would continue in some cases unchecked or would not be corrected on a routine basis. The No Action Alternative would not affect groundwater quality.

4.5 Environmental Restoration

4.5.1 Proposed Action

Implementing the Proposed Action would not likely affect ER Project sites because these are fenced, closed off, or otherwise identified where human health concerns are at issue. There would be no new trail construction in areas of contaminant concern. Trail or trail segments may be closed, restricted to only certain users, or rerouted around areas of concern as more contaminant information becomes available, and when areas are identified where continued or new use might be likely to exacerbate contaminants spreading into the environment.

4.5.2 Trails Closure Alternative

The Trails Closure Alternative would not likely affect ER Project sites because these are fenced, closed off, or otherwise identified where human health concerns are at issue. Closure of all existing trails to the public would eliminate the problem of non-LANL trail users possibly disturbing and destabilizing existing PRSs.

4.5.3 No Action Alternative

The No Action Alternative would not likely affect PRSs where human health concerns are at issue because these are fenced, closed off, or otherwise identified. Trails would not be routed around existing unfenced PRSs and this could result in potential contaminant exposures and spread of contaminants into the environment.

4.6 Transportation, Traffic, and Infrastructure

4.6.1 Proposed Action

Transportation patterns within LANL and the surrounding areas would be expected to slightly change; there would be no infrastructure changes expected, however, as a result of implementing the Proposed Action. A Trails Management Plan could result in closure of some LANL trails or restrictions to certain recreational user groups. This may result in an inconvenience with regards to recreational movement along trails between certain locations for some LANL workers or members of the public because they would have to seek other routes or means of transportation. Some trails remaining available for recreational users could be somewhat enhanced as existing impediments were removed over time as part of a routine maintenance program. This

enhancement could be slightly beneficial to some recreational trail users. Use patterns at LANL along existing trails would be expected to change slightly to accommodate users blocked from closed trails. The construction of new trails could create linkages in the network that would be attractive to trail users and this may result in shifts by users away from other trails. Parking for trail users could be slightly enhanced at LANL.

Transportation of materials, wastes, or recyclables would mostly be limited to transportation actions within LANL. Wastes would be transported to LANL waste management facilities, and recyclable materials would be transported to LANL storage yards via dump trucks or in pickup trucks. Since only one to two trails would likely receive attention in any given year, transportation needs would be limited to about two to twelve extra truck trips per year on internal LANL roads.

4.6.2 Trails Closure Alternative

Transportation patterns within LANL and the surrounding areas would be expected to slightly change. There would be no infrastructure changes as a result of implementing the Trails Closure Alternative. This alternative would result in the closure of all trails to recreational users and some trails to all user groups. Such closures could change traffic patterns both for recreational users and LANL workers and could inconvenience some trail users because they would have to choose alternative transportation routes and means.

4.6.3 No Action Alternative

Transportation patterns within LANL and the surrounding areas would not be expected to change nor would there be infrastructure changes as a result of implementing the No Action Alternative. Existing trailhead areas would continue to be used in the current manner; safety issues, a lack of informational signs, and inadequate parking capacity would persist.

4.7 Health and Safety

4.7.1 Proposed Action

The Proposed Action would have a minimal adverse effect on worker and public health. Workers involved in trail development, construction, and management would be trained to safely perform their tasks. Trail construction and management could require the use of handheld digging and vegetation removal equipment, pack animals (such as horses or mules), or small construction vehicles or trucks that could present minor but generally avoidable health and safety concerns. Trail users would include workers at LANL, officially invited guests, and members of the public. Trail activities would occur outdoors on uneven topography and would include exposure to changing weather conditions, such as lightning and flash floods; the potential for exposure to hazardous materials; and encounters with animals and plants that could cause injuries. Warning signs, alarms, or physical barriers would be used to alert trail workers and users to potentially hazardous situations.

4.7.2 Trails Closure Alternative

The Trails Closure Alternative would have a minimal adverse effect on worker and public health similar to the Proposed Action. Workers involved in trail maintenance and closure would be trained to safely perform tasks that could require the use of handheld digging and vegetation

removal equipment, pack animals (such as horses or mules), and small construction vehicles or trucks that could present minor but generally avoidable health and safety concerns. There would be less exposure to trail users because there would be no trails ultimately that would allow recreational users; use would be restricted to workers at LANL with work related trails use needs and to officially invited guests. Trail closure activities would occur outdoors on uneven topography and would include exposure to changing weather conditions, including lightning and flash floods; the potential for exposure to hazardous materials; and the potential for encounters with animals and plants that could cause injuries. Warning signs, alarms, or physical barriers would be used to alert trail workers and users to potentially hazardous situations. The closure of all LANL trails to recreational users would result in a negative effect to the health and well being of people who currently use the trails for recreational purposes.

4.7.3 No Action Alternative

Under the No Action Alternative, there would be minimal potential for adverse effects to worker and public health. Limited essential maintenance or closure activities could pose minimal hazards to workers. LANL workers and the public would continue to use existing trails and to create new and potentially unsafe trails. Trail users could be exposed to various physical, natural, and operational hazards because activities would occur outdoors on uneven topography; exposure to changing weather conditions, including lightning and flash floods; the potential for exposure to hazardous materials; and the potential encounters with animals and plants that could cause injuries. Continued erosion and trail-user-incurred damages over time would likely increase human health and safety risks along trails to trail users. Trail closure or trail segment closure could occur if safety issues or health issues arise under this alternative.

4.8 Environmental Justice

4.8.1 Proposed Action

There are no concentrations of minority or low-income populations in Los Alamos County, which is the county that would be most directly affected by the Proposed Action. Pueblo members of San Ildefonso and Santa Clara believe that adverse direct and indirect environmental effects to cultural resources could result if some trails remain open for public use and also if some trails were closed at LANL because trespassing could increase on lands belonging to these Pueblos. Tribal policing of their properties, the posting of signs warning against trespass that would accompany implementation of this alternative, and the public information and outreach activities that are part of the Proposed Action would limit such potential disproportionate effects to area Pueblo members and their lands. Nevertheless, this alternative has the potential to interfere with the use of TCPs by members of surrounding Pueblos.

4.8.2 Trails Closure Alternative

Pueblo members of San Ildefonso and Santa Clara believe that adverse indirect environmental effects to cultural resources could result if all trails at LANL were closed to the public because trespassing could increase on lands belonging to these Pueblos. Tribal policing of their properties, the posting of signs warning against trespass that would accompany implementation of this alternative, and the public information and outreach activities that are part of the Trails Closure Alternative would limit such potential disproportionate effects. Nevertheless, this

alternative has the potential to interfere with the use of TCPs by members of surrounding Pueblos.

4.8.3 No Action Alternative

San Ildefonso and Santa Clara Pueblos members believe that the existing situation (No Action Alternative) results in direct, indirect, and adverse environmental effects on cultural resources within LANL. They also believe that the No Action Alternative results in trespassing onto their lands, including sacred areas, and has the potential to adversely affect cultural resources within the boundaries of their lands. This alternative has the potential to interfere with the use of TCPs by members of surrounding Pueblos.

4.9 Soils and Geology

4.9.1 Proposed Action

Construction and maintenance activities associated with the proposed Trail Management Program would have minimal effects on soils in certain areas of LANL. Siltation and stabilization controls would limit or control soil erosion and rockfalls. Trails on mild slopes and on weathered tuff would require BMPs to minimize erosion. No effect on the local geology is anticipated from implementing the Proposed Action. Seismic activity could affect trails; however, the probability of a seismic event is very low.

4.9.2 Trails Closure Alternative

Maintenance and closure activities associated with the Trails Closure Alternative would have minimal effects on soils in certain areas of LANL. No effect on the local geology is anticipated from implementing this alternative. Seismic activity could affect trails; however, the probability of a seismic event is very low. These effects would be less than the Proposed Action because many if not most of the social trails at LANL would be closed and appropriate BMPs and other techniques would be used to preclude further erosion damage.

4.9.3 No Action Alternative

The No Action Alternative would result in continued unmanaged trail use at LANL. There would not be an ongoing and coherent approach designed to repair existing soil damage or to preclude further erosion caused by trail use.

4.10 Waste Management

4.10.1 Proposed Action

Implementation of the Proposed Action would not require the construction of any new waste landfills. The reuse of existing recyclable materials stockpiled at LANL would be a beneficial effect to the overall waste management program at LANL. The Proposed Action would generate a very small amount of solid waste from construction, maintenance, or closure activities that would be disposed of at the Los Alamos County Landfill or its replacement facility in accordance with practices required by LANL's Laboratory Implementing Requirement for General Waste Management (LANL 1998). It is expected that all excavated material (such as soil and rocks) would either be used in the construction, repair, or closure activities performed for individual trails or at new parking areas or along new trails. Any excess soil or rocks, or

removed or excess asphalt or concrete materials, generated during the various trails activities would be crushed and recycled for use as road base or for landscaping materials at LANL or offsite. It may be necessary to use construction debris staging areas for a short period of time to stockpile these materials until they are reused in other projects.

Trees and woody vegetation could be removed from various locations along trails or new parking areas. Brush, trees, or vegetation could be chipped onsite and spread along trail corridors or may be removed to the Los Alamos County Landfill for chipping and reuse as mulch. Chipped material would not be spread in or near any floodplain or waterway.

About one to six truckloads of recyclables or wastes would be expected to be generated per year. This would amount to a maximum of about 120 yd³ (91 m³) per year of wastes requiring disposal. This quantity of waste is well within the waste management capabilities of LANL facilities.

4.10.2 Trails Closure Alternative

Implementation of the Trails Closure Alternative would result in waste management and waste recycling impacts similar in character and quantities to those described for the Proposed Action. Most wastes would be generated as a result of trail closure activities; trail maintenance activities along trails that would remain open to limited user groups would generate less wastes over time than would be expected to be generated by the Proposed Action.

4.10.3 No Action Alternative

There would be no additional waste generated under the No Action Alternative, since there would be no trails construction activities. The construction debris waste shipments to landfills or recycling centers would not occur.

4.11 Air Quality

4.11.1 Proposed Action

Construction, repair, or trail closure activities conducted as a result of implementing the Proposed Action could result in temporary, localized emissions associated with vehicle and equipment exhaust as well as in particulate (dust) emissions from excavation and construction activities. Effects on air quality in the LANL area would be expected to be temporary and localized as well. There would be no long-term degradation of regional air quality. The air emissions would not be expected to exceed either the NAAQS or the NMAAQs. Effects of the Proposed Action on air quality would be negligible compared to potential annual air pollutant emissions from LANL as a whole.

Implementing appropriate control measures would mitigate fugitive dust. Frequent watering with watering trucks would be used to control fugitive dust emissions at new parking lot sites. Despite the use of soil watering during excavation to control dust emissions, some soil could potentially be suspended in the air prior to paving activities. Emissions from diesel engine combustion products could result from excavation and construction activities involving heavy equipment. Emissions would not cause an exceedence of any NAAQS or NMAAQs. All air emissions associated with the operation of excavation and construction equipment would be below ambient air quality standards. Total emissions of criteria pollutants and other air emissions associated with the operation of heavy equipment for excavation and construction activities would contribute greater emissions than other vehicles due to the types of engines and

their respective emission factors. Heavy equipment would emit small quantities of criteria pollutants subject to the NAAQS and NMAAQs as adopted by the State of New Mexico in its State Implementation Plan⁹.

4.11.2 Trails Closure Alternative

Implementation of the Trails Closure Alternative would be expected to result in temporary, localized emissions associated with vehicle and equipment exhaust as well as in particulate (dust) emissions from trail repair or closure activities. The air emissions would not be expected to exceed either the NAAQS or the NMAAQs. Effects on air quality from implementing the Trails Closure Alternative would be negligible compared to potential annual air pollutant emissions from LANL as a whole. All air emissions associated with the operation of excavation and construction equipment would be below ambient air quality standards.

4.11.3 No Action Alternative

There would be no change from ambient air quality effects associated with implementing the No Action Alternative. Trail maintenance, construction, and closure activities would not be expected to occur except in an ad hoc fashion and on a very small scale.

4.12 Noise

4.12.1 Proposed Action

The Proposed Action would be expected to result in limited, short-term increases in noise levels associated primarily with various construction activities and, in a more limited fashion, with trails repair or closure activities. Following the completion of these activities, noise levels would return to existing levels. Noise generated by the Proposed Action is not expected to have an adverse effect on either LANL workers or members of the public or on wildlife that may be using forested trail areas. Noise generated by trail maintenance, repair, construction, or closure activities would be very short term in duration and highly localized and would be consistent with noise levels in nearby developed areas at LANL. Some startle response may be experienced by area wildlife from trails work and, possibly, from trails use, but it is not expected that any adverse wildlife effects would be associated with unusual, loud, and potentially startling noises.

Earth-moving activities and some trail construction activities could require the use of heavy equipment for removal of debris, dirt, and vegetation and for paving of new parking areas. Heavy equipment such as front-end loaders and backhoes would produce intermittent noise levels at around 73 to 94 dBA at 50 ft (15 m) from the work site under normal working conditions (Canter 1996, Magrab 1975). Truck traffic would occur frequently but would generally produce noise levels below that of the heavy equipment. Personal protective equipment would be recommended if site-specific work produced noise levels above the LANL action level of 82 dBA. Based upon a number of physical features, such as attenuation factors, noise levels should return to background levels within about 200 ft (66 m) of the noise source (Canter 1996). Since sound levels would be expected to dissipate to background levels before reaching most publicly accessible areas (the trails would be closed to use while trail work using heavy machinery was being conducted) and seasonal timing restriction would apply to trail stretches at or near

⁹ The purpose of the State Implementation Plan is to ensure that Federal emission standards are being implemented and NAAQs are being achieved.

sensitive wildlife habitats, noise generated by implementing the Proposed Action should not be expected to be noticeable to members of the public or to disturb local wildlife. Traffic noise from commuting workers would not be expected to noticeably increase the present traffic noise level on roads at LANL. The vehicles of workers would remain parked during the day and would not contribute to background noise levels. Therefore, noise levels are not expected to exceed the established TLV.

4.12.2 Trails Closure Alternative

Implementing the Trails Closure Alternative would be expected to result in limited, short-term increases in noise levels similar to those described in the previous subsection regarding the Proposed Action. Most noise would be generated during trail closure activities and there would not likely be any associated noise generated during construction activities using heavy equipment.

4.12.3 No Action Alternative

Under the No Action Alternative, ambient noise levels would remain unchanged at LANL. Potential noise from trail repair, construction, or closure activities would not occur with any frequency as trail repairs or closure activities would be performed rarely and in an ad hoc fashion. Environmental noise levels in and around LANL would be expected to remain below 80 dBA on average.